

What is claimed is:

1. A method for analyzing the biological age of a subject comprising:
 - obtaining age, body fat percentage, weight and sex information from a subject;
 - measuring said subject's average oxygen consumption when the subject's respiratory exchange rate is about 1.0;
 - calculating the subject's predicted maximum oxygen consumption based on the subject's sex, body fat percentage, weight and age in years;
 - wherein the age in years of a subject over a predetermined age is a default age and the age in years of a subject under said predetermined age is the subject's actual age;
 - dividing said subject's average oxygen consumption by said subject's predicted maximum oxygen consumption to obtain an energy production value for said subject; and
 - comparing said subject's energy production to a target energy production range for said subject's appropriate age group.
2. The method of claim 1, wherein the predetermined age is equal to the default age.
3. The method of claim 1 further comprising, treating said subject to improve said subject's energy production in relation to the subject's appropriate age range.
4. The method of claim 3, further comprising administering a program of nutrition and exercise to the subject to improve said subject's energy production.
5. The method of claim 1 further comprising, applying said subject's energy production to assess the subject's biological age.
6. The method of claim 5 further comprising, calculating an average predicted energy production using data from individuals of different ages having the same sex, height and weight as the subject.

7. The method of claim 6, wherein a subject with an energy quotient higher than the average predicted energy production for said subject has a biological age lower than said subject's actual age.

8. The method of claim 6, wherein a subject with an energy production lower than the average predicted energy production for said subject has a biological age higher than said subject's actual age.

9. A method for treating the biological age of a subject comprising:

- obtaining age, body fat percentage, weight and sex information from a subject;
- measuring said subject's average oxygen consumption when the subject's respiratory exchange rate is about 1.0;
- calculating the subject's predicted maximum oxygen consumption based on the subject's sex, body fat percentage, weight and age in years;
- wherein the age in years of a subject over a predetermined age is a default age and the age in years of a subject under said predetermined age is the subject's actual age;
- dividing said subject's average oxygen consumption by said subject's predicted maximum oxygen consumption to obtain an energy production value for said subject;
- comparing said subject's energy production to a target energy production range for said subject's appropriate age group; and
- administering a program of nutrition and exercise to said subject to improve said subject's energy production.


10. The method of claim 9, wherein the predetermined age is equal to the default age.

11. The method of claim 9 further comprising, applying said subject's energy production to assess the subject's biological age.

12. The method of claim 11 further comprising, calculating a predicted energy production using data from individuals of different ages having the same sex, height and weight as the subject.

13. The method of claim 12, wherein a subject with an energy production value higher than the predicted energy production for said subject has a biological age lower than said subject's actual age.

14. The method of claim 12, wherein a subject with an energy production value lower than the predicted energy production for said subject has a biological age higher than said subject's actual age.

15. A method for analyzing the biological age of a subject comprising: 
obtaining age, body fat percentage, weight and sex information from a subject;
measuring the subject's average resting oxygen consumption;
calculating said subject's predicted basal metabolic rate based on the subject's sex, body fat percentage, weight and age in years;
wherein the age in years of a subject over a predetermined age is a default age and the age in years of a subject under said predetermined age is the subject's actual age;
dividing said subject's average resting oxygen consumption by said subject's predicted basal metabolic rate to obtain a metabolic rate value for said subject;
comparing said metabolic rate value with a target metabolic rate range for said subject's appropriate age group.

16. The method of claim 15, wherein the predetermined age is equal to the default age.

17. The method of claim 15 further comprising, treating said subject to improve said subject's metabolic rate in relation to the subject's appropriate age range.

18. The method of claim 17 further comprising, administering a program of nutrition and exercise to the subject to improve said subject's metabolic rate.

19. The method of claim 15 further comprising, applying said subject's metabolic rate to assess the subject's biological age.

20. The method of claim 19, wherein a metabolic rate value lower than the target metabolic rate range for said subject's appropriate age group indicates increased biological age.

21. The method of claim 19, wherein a metabolic rate value higher than the target metabolic rate range for said subject's appropriate age group indicates decreased biological age.

22. The method of claim 19, wherein a metabolic rate value lower than the target metabolic rate range indicates adrenal insufficiency, thyroid deficiency, insufficient sleep, deficient muscle mass, testosterone deficiency, growth hormone deficiency, nutritional deficiency, excessive estrogen, progesterone deficiency, dehydration, inflammatory illness, anxiety, invalid test results or a combination thereof.

23. A method for analyzing the biological age of a subject comprising;
obtaining age, body fat percentage, weight and sex information from a subject;
measuring the subject's resting respiratory exchange ratio;
calculating said subject's fat metabolism as a function of said subject's resting respiratory exchange ratio;
wherein a low fat metabolism as a function of said subject's respiratory resting exchange ratio indicates increased carbohydrate metabolism and impaired fat metabolism;
and a high fat metabolism as a function of said subject's resting respiratory exchange ratio indicates decreased carbohydrate metabolism and healthy fat metabolism.
24. The method of claim 23, wherein low fat metabolism as a function of said subject's resting respiratory exchange ratio indicates increased carbohydrate intake.
25. The method of claim 23, wherein low fat metabolism as a function of said subject's resting respiratory exchange ratio indicates increased biological age.
26. The method of claim 25 further comprising, decreasing biological age by prescribing a diet of reduced carbohydrate consumption and nutritional supplementation.
27. The method of claim 24 further comprising, prescribing a diet of reduced carbohydrate consumption and nutritional supplementation.
28. The method of claim 23, wherein high fat metabolism as a function of said subject's resting respiratory exchange ratio indicates decreased biological age.

29. A method for analyzing the biological age of a subject comprising;
- obtaining age, body fat percentage, weight and sex information from a subject;
 - measuring said subject's average oxygen consumption when said subject's exertional respiratory exchange ratio is about 0.85;
 - calculating the subject's predicted maximum oxygen consumption based on the subject's sex, body fat percentage, weight and age in years;
 - wherein the age in years of a subject over a predetermined age is a default age and the age in years of a subject under said predetermined age is the subject's actual age;
 - dividing said subject's average oxygen consumption at exertional respiratory exchange ratio of about 0.85 by said subject's predicted maximum oxygen consumption to obtain an exertional fat metabolism value for said subject; and
 - comparing said subject's exertional fat metabolism value to a target fat metabolism range for the subject's appropriate age group.
30. The method of claim 29, wherein the predetermined age is equal to the default age.
31. The method of claim 29, wherein a fat metabolism value equal to or higher than the target fat metabolism range indicates optimal fat metabolism.
32. The method of claim 29, wherein a fat metabolism value lower than the target fat metabolism range indicates decreased fat metabolism.
33. The method of claim 32, wherein a fat metabolism value significantly lower than the target fat metabolism range indicates diabetes, insulin resistance, excessive carbohydrate intake, hormonal deficiencies, sleep deficiency, carnitine deficiency, Coenzyme Q10 deficiencies, dietary fat deficiencies, excessive trans fatty acids, nutritional deficiencies or a combination thereof.

34. The method of claim 32 further comprising, treating the subject's fat metabolism by prescribing nutritional supplementation and dietary restrictions.

35. The method of claim 29, wherein a fat metabolism value greater than the target fat metabolism range indicates decreased biological age.

36. The method of claim 29, wherein a fat metabolism value lower than the fat metabolism range indicates increased biological age.

37. A method for analyzing the biological age of a subject comprising;
 obtaining age, body fat percentage, weight and sex information from a subject;
 measuring said subject's average work produced when said subject's exertional respiratory exchange ratio is about 0.85;
 calculating the subject's predicted maximum oxygen consumption based on the subject's sex, body fat percentage, weight and age in years;
 wherein the age in years of a subject over a predetermined age is a default age and the age in years of a subject under said predetermined age is the subject's actual age;
 calculating said subject's predicted maximum work produced as a function of said subject's predicted maximum oxygen consumption;
 dividing said subject's average work produced when said subject's exertional respiratory exchange ratio is about 0.85 by said subject's predicted maximum work produced to obtain a work fat metabolism value for said subject;
 comparing said subject's work fat metabolism to a target work fat metabolism range for said subject's appropriate age group.

38. The method of Claim 37, wherein the predetermined age is equal to the default age.

39. The method of Claim 37, wherein a work fat metabolism equal to or higher than the target work fat metabolism range indicates optimal fat metabolism.

40. The method of Claim 37, wherein a work fat metabolism lower than the target work fat metabolism range indicates decreased fat metabolism.

41. The method of Claim 40, wherein a work fat metabolism significantly lower than the target work fat metabolism range indicates decreased muscle mass.

42. The method of Claim 41 further comprising, treating decreased fat metabolism capability by prescribing nutritional supplementation and an exercise regimen.

43. The method of Claim 42, wherein the exercise regimen further comprises weight resistance training.

44. The method of claim 36, wherein a work fat metabolism higher than the target work fat metabolism range indicates decreased biological age.

45. The method of claim 36, wherein a work fat metabolism lower than the target work fat metabolism range indicates increased biological age.

46. A method for analyzing the biological age of a subject comprising:

- obtaining age, body fat percentage, weight and sex information from a subject;
- measuring said subject's average work produced when said subject's exertional respiratory exchange ratio is about 1.00;
- calculating the subject's predicted maximum oxygen consumption based on the subject's sex, body fat percentage, weight and age in years;

wherein the age in years of a subject over a predetermined age is a default age and the age in years of a subject under said predetermined age is the subject's actual age;

calculating said subject's predicted maximum average work produced as a function of said subject's predicted maximum average oxygen consumption;

dividing said subject's average work produced when said subject's exertional respiratory exchange ratio is about 1.00 by said subject's predicted maximum work produced to obtain an overall fitness value for said subject;

comparing said subject's overall fitness value to a target overall fitness range for said subject's appropriate age group.

47. The method of Claim 46, wherein the predetermined age is equal to the default age.

48. The method of Claim 46, wherein an overall fitness value equal to or higher than the target overall fitness level indicates optimal strength and fitness.

49. The method of Claim 46, wherein an overall fitness lower than the target overall fitness range indicates decreased strength and fitness.


50. The method of Claim 49, wherein an overall fitness value significantly lower than the target overall fitness range indicates decreased muscle mass.

51. The method of Claim 50 further comprising, treating decreased strength and fitness by prescribing nutritional supplementation and an exercise regimen.

52. The method of Claim 51, wherein the exercise regimen further comprises weight resistance training.

53. The method of claim 46, wherein an overall fitness value higher than the target work fat metabolism range indicates decreased biological age.

54. The method of claim 46, wherein an overall fitness value lower than the target work fat metabolism range indicates increased biological age.

55. A method for analyzing the biological age of a subject comprising: 
obtaining age, body fat percentage, weight and sex information from a subject;
measuring said subject's average oxygen consumption when the subject's respiratory exchange rate is about 1.0;
calculating the subject's biological age as a function of said subject's average oxygen consumption when the subject's respiratory exchange rate is about 1.0;
wherein said calculation is dependent on the sex of the subject;
wherein said calculation quantifies the biological age of a person as a number.

56. The method of Claim 55 further comprising, prescribing a program of nutrition and exercise to decrease the biological age of the subject.